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Ethical considerations and limited guidance for research in adventure sports coaching

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ABSTRACT

This autoethnography commentary critically examines the experiences of an adventure sports coach turned academic as they consider the ethical considerations of real-world research in adventure sports coaching. These considerations centre around two self-perceived challenges facing researchers in adventure sports: maintaining rigour and the practicalities of researching in adventurous environments. Through discussion of these challenges, limited guidance is offered for those seeking to research adventure sports.

KEYWORDS

Autoethnographic; ethical research; real-world research; adventure sports coaching

In the UK, adventure sports participation has witnessed a substantial increase in the 12 months up to 2019 (Sport England, 2019). As part of this growth, there is a demand for adaptable outdoor professionals with a wide range of skills (Valkonen, Huilaja, & Koikkalainen, 2013) that can deliver the adventurous coaching experiences learners desire (Eastabrook & Collins, 2020). The increase in demand may be related to a rise in research concerning the adventure sports coach (Christian, Hodgson, Berry, & Kearney, 2019; Collins & Collins, 2012; Gray & Collins, 2016; Sinfield, Allen, & Collins, 2019). The growing demand for understanding professional practice has stemmed from academia, Awarding Bodies and practitioners alike, creating a rich but currently small wealth of research on various topics (Durán-Sánchez, Álvarez-García, & Del Río-rama, 2020). As this growth is set to continue, it seems like an appropriate time to discuss some of the ethical considerations of real-world research in adventure, to offer some limited guidance.

Adventure sports coaching research draws methodological influences from its outdoor education heritage, and increasingly and more broadly, sports coaching and leadership. However, with an increasing variety of research methodologies and approaches, there is naturally an interest in understanding and improving the research process. Therefore, it seems prudent to critically examine the ethical aspects that might be specific to adventure sports coaching research. To undertake this examination, the authors present an autoethnographic reflexive article that aims to stimulate debate and guide others towards ethically sound research in adventure. Details on the first author's background and research position preclude a two part discussion on ethical considerations associated with adventure sports research. The discussion is framed and conceptualised for the purposed of this article within two challenges: maintaining rigour in research methods and the practicalities of researching in adventurous environments. Lastly, the article offers concluding remarks that offer a link between coaching practice itself and the research process.

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Author's background and position

In alignment with Shenton's (2004) guidance for trustworthy qualitative research and acknowledging Humberstone and Nicol (2019) point, past experiences are filtered through current experiences to turn autoethnographic research into direct future action, a short account of the first author's background and research philosophy is offered.

The authors take a view on ethics in alignment with Groundwater-Smith and Mockler (2007) that

> ethics is not merely a series of boxes to be ticked as a set of procedural conditions, usually demanded by University Human Research Ethics Committees and the like but is an orientation to research practice that is deeply embedded in those working in the field substantively and engagingly (p. 5).

The authors' antecedents as both adventure sports coaches and researchers, inform their ethical stance. Indeed, ethics in this sense provides a framework for asking *meaningful* questions (Campbell & Groundwater-Smith, 2007, p. 8 emphasis added): meaningful of impact and relevance to practising coaches. Notably, the notions of impact and relevance are dimensions of quality for research and constitute its integrity and transparency.

As advocated by Nicol (2013), an autoethnographic methodology has been adopted that utilises a reflexive commentary (Morlacchi & Martin, 2009) intending to stimulate debate within the authors community of practice. From this point, a first-person written style has been adopted. However, even in creating an autoethnographic paper with the use of I, multiple academics and practitioners have shaped my views, experiences, and solutions to the challenges which will be explored later. Therefore, the use of I refers to the first author, while the second author is credited as a critical friend and acknowledges that one's positions are shaped by interactions with their community of practice (Stoszkowski & Collins, 2014). Collaborative autoethnography has been suggested by Lapadat (2017) to strengthen and improve the reach of such pieces, especially where the value of such collaborative work on practitioners has been reported within social work (Jensen-Hart & Williams, 2010).

I have 15 years' experience as an adventure sports coach and hold a British Canoe Level 5 Coach award alongside other climbing and mountaineering awards. In particular, successfully completing the British Canoeing Level 5 award gave me the confidence to critically review my own coaching practice with clients, which led me to question the appropriateness of coaching practices taught in coach education. In terms of experience, I have been self-employed running my own adventure sports coaching company as well as working for national centres and other leading providers in the UK and Europe. Additionally, I have taught several undergraduate outdoor programmes using adventurous education to develop coaching and leadership abilities and more recently teach adventure education within secondary education. My research interest is anchored in a personal desire to improve my own practice through better comprehension of coaching practice, and I would describe myself as research-active over the last four years.

My research philosophy draws on a range of paradigms: pragmatism, constructivism, interpretivism and phenomenology. Elements of each paradigm can, at times, appear the most appropriate to me and my adventure sports research, depending on context, research objectives or collaborators. When researchers aim to be reflexive and address the disadvantages of a paradigm, it is easy to switch to another paradigm to justify a position. Similarly, merely adopting a simplistic post-positive position to justify mixing approach seems too vague. The rationale of a paradigm feels necessary if, ultimately, findings are to be contextualised and credible. However, 'mixing paradigms has often been considered taboo, post-positivism provides' (Henderson, 2011, p. 342) an alternative, requiring adequate justification with implications for the meaning of epistemology and ontology.

A subjective epistemological basis accepts and anticipates multiple interpretations of reality rather than pursuing a grand theory or generalisable truth. Therefore, I seek a representative range of both in-depth and broad accounts of events and experiences that aim to create detailed representations of how those in practice understand their coaching and leadership. From an

ontological position, reality can be both objective and subjective, with no one ultimate truth; because the truth is continually changing. For example, the global pandemic has altered reality for all, causing many people to take a more objective view of the world and their participation within it. Epistemologically, knowledge of the world is not necessarily fully accessible, so I endeavour to establish the most 'probable' truth because there are multiple, diverse interpretations of reality and therefore there cannot be one ultimate or 'correct' way. My experiences cause me to see and interpret actions differently from another individual with their own experience, a point highlighted by Nicol (2013) and echoed by Olive (2020), research is through me, not about me.

Consequently, individuals, groups, and society construct knowledge, and that knowledge is mediated and continuously under revision. Methodologically, understanding is drawn through different routes of reasoning (inductive, abductive and deductive), with a forward-looking focus; how could things be improved? The adventure research environment is characterised by a continual redefining of problems that are frequently messy and wicked (Vaughan, Mallett, Davids, Potrac, & López-Felip, 2019). As a result, cooperative interaction (e.g. action research) is also a methodological option. The ontological, epistemological, and methodological position offered facilities a broad range of quantitative, qualitative, and mixed approaches, which utilise representative samples via the use of: surveys, interviews, focus groups, naturalistic and participant observation, interviews, use of narrative and participatory approaches as well as an iterative research design.

Maintaining rigour in research methods

Ethically, quality research must hold sufficient academic rigour to be accepted valid and trustworthy while also appealing to practitioners' needs for incorporation into practice. While rigour for both of these audiences is not necessarily mutually exclusive, it does present challenges.

Quality research

The need for quality research is particularly pertinent given that research into adventure sports coaching is still in its infancy; it is the 'new kid on the block' (Collins & Collins, 2012, p. 13). Coining a new term; adventure sports, presents challenges. Adventure and sport do not necessarily sit well together. Sport is often synonymous with competition, where rigid definitions of participation exist that offer a base level of understanding between athletes, practitioners, and academics (Guttmann, 1978). Whereas adventurous activities conjure images of kayaking or climbing where there is little to no regulation as to how individuals participate, creating a condition for confusion amongst stakeholders (Batuev & Robinson, 2019). However, it is not the activity that defines an adventure sport; it is the way in which the participant engages in the activity (Carson, Davies, & Collins, 2020), however, defining this engagement is opaque. A lack of definitional clarity is problematic for researchers; unacknowledged heterogeneity within these forms of the sport means that data may not always be compared or presented as valid nor reliable. While the recent growth in research in our domain, specifically adventure sports research, improves understanding, a fundamental challenge still exists. Who are we, and what do we do? Given the personalised nature of engagement (Collins & Brymer, 2020), all research is in danger of being re-interpreted by each reader.

Towards quality research in adventure sports, multiple frameworks exist to consider the quality of both quantitative (Morrow, 2005; Shenton, 2004) and qualitative research (Scrutton & Beames, 2015). In many studies, improving trustworthiness can be as simple as making adequate time to secure the integrity of the data collected, a point also made by Braun and Clarke (2006). Similarly, attention should be paid to providing enough detail for the readers to fully understand the data's analysis. These challenges are not unique to adventure sports research. Durán-Sánchez et al. (2020) conclude that the overall research volume in nature sports, of which adventure sports could be considered a subset, is limited. Consequently, poorly conceived studies have a disproportionate impact on understanding and therefore, may undermine our emerging body of work as a collective. My

impression of poorly conceived studies does not appear to consider the potential practical impact of their findings, nor do they build a context from practice to frame the study. In essence, researchers are at risk of asking and answering questions those in practice may not be interested in answer too, as the studies are poorly reasoned.

Given the range of research methodologies available to researchers, selecting the right research methodology is central to quality research. Much of the research design choice will depend on the researcher's philosophy (Holden & Lynch, 2004). However, care should be taken to match study aims with appropriate methodology. The pressure to publish detailed by Sarewitz (2016) suggests that methodologies that are not necessarily inappropriate but convenient are being used rather than the most appropriate or robust methodology. Given the potential challenges in adventure sports, researchers must balance what is achievable and complete with the most rigorous. Durán-Sánchez et al. (2020) predict a rise in our research area in the near future. Suppose adventure sports research is considered a serious field of inquiry that will influence outdoor education and sports coaching. In that case, researchers have an ethical duty to ensure they conduct quality and reasoned research, as discussed in the previous paragraph. Of particular note in this regard is the use of expert adventure sports coaches in research.

Expert adventure sport coaches

One proven methodology of examining sports coaching practice is interviewing expert coaches (Bogner & Menz, 2009). Experts have been used in previous adventure sports research by multiple authors, see examples of research in the introduction section, and are a logical, methodological choice to be considered for future research projects. In particular, where adventure sports coaching practice induces a large cognitive load on the coaches (Collins, Carson, & Collins, 2016), it is not just the volume of declared knowledge that is of interest to researchers, but also the application of that knowledge in a contextual setting. Nash, Martindale, Collins, and Martindale (2012) also make this point and propose that an expert has a positive attitude to lifelong learning and can work independently in novel situations.

Such dimensions of expertise seem logical but cannot be considered comprehensive or appropriate until research is conducted that specifically investigates expertise in adventure sports coaching. There should be careful use of National Governing Body awards to denote expertise. In particular, there is no parity in awarding levels between adventure sport disciplines (e.g. paddlesport and mountaineering) or indeed within the same disciplines. For example, the British Canoeing Level 5 canoe coach had a different assessment method than a British Canoeing Level 5 raft guide. Specialist knowledge of British Canoeing processes is required to know that there is a difference, and so to the outside reader, these two individuals seem to be on par but potentially are not. Additionally, the assessment processes for these qualifications are not designed to test expertise. Indeed, they are competency-based assessments. There is an ethical responsibility for researchers to ensure that the expertise of their coaches is beyond a reasonable doubt. However, until specific research offers guidance to determine expertise, how this is achieved may be unique to each study.

As an illustration of *a* way of determining suitable coach expertise for a specific study, a preliminary study could be conducted. Such a preliminary study could explore a participant coach's practice before the primary data collection occurs. Participant coaches can be recruited via peer recommendations (Nash et al., 2012) from that author's professional network to reduce author bias or convenient sampling, and use National Governing Body qualifications and experience as the criteria—as used in many adventure sports coaching research papers. These coaches can then be interviewed using a piloted semi-structured guide that aims to explore their practice, focusing on the aims of the main study. These transcribed interviews can then be analysed, where individual coaches could be compared against pre-existing notions of expertise in that subject area. To improve the trustworthiness of such analysis, the use of a codebook as advocated by DeCuir-Gunby, Marshall, and McCulloch (2011) would seem advisable yet intensive in context to its use as a preliminary study.

However, from my experience of conducting a preliminary study to this end, it was the manner of the replies rather than the context of the replies in the interviews that were most useful in safeguarding expertise.

For example, in an initial sample of 12 coaches, all of whom held high-level qualifications and significant experience, the quickness of response put one coache's expertise in doubt. The majority of coaches were hesitant to be drawn on an answer and slow to reply, in part because they could see a scenario where their initial response might not be valid. In contrast, a coach quick to a firm answer may have said a response in alignment with the codebook but *felt* more like a programmed response rather than based on experience. For me, this experience underscores the importance of listening to the interviews while analysis them, as advocated by many authors. Furthermore, and unexpectedly, the use of a preliminary study had two further benefits; increasing rapport between the researcher and coach and removing unexpected author bias. Time spent together, increased the levels of trust and made the primary data collection easier. More interestingly, in exploring the coach's practice, it became evident that I had been an influence in their coaching development, despite not having met them before. While the coach may have been referencing me innocently to flatter me or as a conversation starter, it seemed necessary to remove them from the main study to safeguard the data, as frustrating as that was. While the preliminary study was with benefits, it was very time-consuming, another solution to safeguarding expertise that retains some of the benefits, would be ideal.

Credibility to practitioners

In contrast to the rich literature of academic views on what constitutes credible research (Morrow, 2005; Shenton, 2004; Smith & McGannon, 2018), at the time of writing there is little guidance offered as to what adventure sports coaches find credible, making researching and writing for practice challenging. Looking further afield for guidance, in management research, MacLean, MacIntosh, and Grant (2002) recommend that researchers seeking to have a real-world impact should attempt to use research methodologies that practitioners see as trustworthy, specifically Grounded Theory or Action Research. While the evidence for what is viewed as credible in practitioners' eyes is weak, I reject the notions of narrowing the choice of methodologies. To do so contradicts, in part, my stated philosophy. A potential solution is not necessary to alter research to appeal to practitioners, but instead encourage them to read literature in a critical yet open-minded manner. Such an approach has been advocated by Jenkins (2013) in sporting contexts and, Lietz and Zayas (2010) within social work. Formal coach education could have a focus on *how* coaches develop rather than *what* they should learn. Within this context, becoming research literate would encourage and expand the coaches' thinking, aligning their perception of credible research with that of academics. However, investigating what coaches deem as credible research, would be of interest to academics and national governing bodies aiming for real-world impact.

The practicalities of researching in adventurous environments

While acknowledging that not all research methodologies require researchers to enter adventurous environments, a broad range of methodologies would. In examples where real-world data collection is desirable, there are challenges associated with data collection and safety. Furthermore, researchers have broader practical challenges regarding time that may not be unique to adventure sports but seem especially pertinent to discuss briefly.

Time

Time for research is challenging for everyone. Typically, those wishing to develop as researchers enrolling in full or part-time university study. The demand for research concerning adventure sports

coaching has yet to, and may never, reach a point where many fully funded, salaried, research positions are available. Additionally, I suspect that many coaches wishing to participate in research projects do not wish to leave practice entirely to pursue research. These constraints mean that the part-time study option is a sensible choice for many. It is nearly impossible through my own experiences and certainly not pragmatic to work full time while committing to part-time study and holding down a meaningful relationship with a spouse or child, for example. This issue is exacerbated by the desire of coaches to participate in adventure sports themselves to stay active (Christian, Berry, & Kearney, 2017). When meaningful relationships and continued participation in adventure sports are desired, part-time study could be combined with a correspondingly reduced paid workload, for example, 0.4 study and 0.6 work. However, the ethical consideration for universities is that not everyone wishing to participate in level 7 or 8 programmes can afford such a reduced workload. Indeed, this may accentuate the prominence of white middle-class researchers (Bola, 1995). Therefore, to encourage diversity in adventure sports research, consideration should be given to a programme that fits within potential researcher's time. A *spare-time* option may be an alternative but clearly would need to include appropriate assessment methods on the pathway to academically rigorous research.

Data collection

Beyond the obvious difficulties of writing field notes in the rain or having sufficient battery power for the camera in low temperatures, or just keeping yourself warm and dry, there are two relevant aspects to data collection in adventurous environments to be considered: trust with participants and respecting the client's adventure.

Trust

All researchers are 'building sufficient trust and rapport with the participants that one is assured that the participants are telling the truth as they know it' (Morrow, 2005, p. 253). However, many research-participating coaches operate within a commercial setting. Therefore, researchers may have access to potentially commercially sensitive information, such as client contact details, venues and coaching practices. Trust must be established between the researcher and the organisation before data collection takes place. Informed organisational consent for data collection, in addition to participant consent, may be prudent to secure this trust. Taking time to build a rapport with the organisation as well as the coaches requires an adequate explanation of the details in the informed consent form, which must be approved by the ethics committee.

An additional observation is that in the development of a suitable rapport, organisations or coaches were not interested in remuneration for research access. A rejection of remuneration appears to be in contrast to the view held in qualitative research (Head, 2009). Indeed, Head comments that qualitative research participants expect payment. Instead, my experience is that participating coaches were interested in the development of knowledge. Their interest extended to a keenness to engage further with me after the research was complete. However, while not explicitly linked to research access, I have been asked, informally, by coaches and organisations previously involved in their own data collection, for insight or opinion that may aid their practice or business. I consider this an opportunity to repay the access granted by the coach or organisation and, where appropriate, to reconsider the research's practical implication, the importance of which has been discussed previously. However, care should be taken if that research has been written up as offering no reward to coaches for participation, then later providing something in turn. Similarly, it is unfair of the coaches to expect academics to work for free in return for access already provided. The best guidance is early clarity between all parties and good ethical judgment.

I believe there is also an ethical consideration regarding deductive disclosure. There is a limited population of high-level coaches in the UK, which increases the risk of deductive disclosure upon the

publication of results. Detailing demographics such as discipline and qualification would make it relatively easy to search the internet to find a specific coach, particularly a female coach. Sieber and Sieber (2006) offers guidance to guard against deductive disclosure; however, this does not seem adequate given the small population. Deductive disclosure poses a small but crucial ethical dilemma to resolve. There is value in disclosing demographic data of participant coaches to improve the trustworthiness of the data. However, researchers also have an ethical duty to preserve their anonymity. Participant coaches' demographic data can be collected, but considering the usefulness of that data to the particular study's aims and objectives, must be made before publishing such data. Similarly, academia should consider the risk of deductive disclosure in the marking and peer-review process when such data is withheld from a study.

Respecting the adventure

The researcher is joining the client on their adventure (Eastabrook & Collins, 2020), and given the personalised nature of adventure (Collins & Brymer, 2020), is sharing something personal with the client. The client's conceptualisation of adventure should be treated with respect and presents a simple yet essential ethical consideration. For example, suppose the client has opted not to do something, such as attempting a particular climbing route or running a particular overfall in the sea. In that case, the researcher should respect that preference in both their own actions and language. It would be easy to belittle a challenge significant to the client.

Similarly, real-world research experience has found that clients can be sceptical of the title 'researcher' and are therefore reluctant to have the researcher accompany them on their adventure. However, upon establishing the researcher's coaching credibility, even though they understand the researcher is only there to observe the coach, the client is more relaxed in the researcher's presence. An additional observation is that clients have looked towards the researcher for assistance when their coach has set them an independent task. This potential interference creates another simple ethical consideration, where interacting with the client will affect their learning and hence the results. The researcher then has to deflect this back to the client in a professional way as to not intervene in the coaching or avoid being alone with the client altogether to guard against this scenario.

Safety

There are two aspects of safety to be discussed. Firstly, the ethical imperative is to ensure researcher safety without impacting the data collected, all while operating in adventurous environments. Secondly, what action to take if the researcher feels the safety of the group has been compromised.

Researcher safety

Where the methodology chosen requires a researcher to make observations of the coaching session, researchers need to be able to access the terrain being used to gather data. Given that adventure sports coaching takes place in context, often in adventurous, hyper-dynamic environments (Collins & Collins, 2016), the researcher needs to able to accompany the coach on the coaching session. This requires both the technical skills and cognitive capacity to perform the adventure sport and be able to make detailed field notes. There is an ethical imperative on the researcher's supervisor that they are going to be safe *and* able to gather the data. Experience of seeking ethical approval has demonstrated that the risk assessment conducted to gain such consent from a university committee only fulfils this requirement in part. As those who sit on the ethics committees do not have the technical understanding to review such a document (Campbell & Groundwater-Smith, 2007), reviewing adventurous activities requires niche knowledge and experience. Therefore, part of this responsibility falls to the supervisor, requiring an honest appraisal of the risk to both data collection and

researcher safety. Where the researcher cannot adequately demonstrate their own independence in the environment, the participating coach plans to use; further action is required to ensure the researcher's safety. The researcher may require an additional adventure sports coach who can protect the researcher's safety. The second coach would need to be suitability qualified, sensitive to the anonymity granted to the coach, and be professional around the coach's clients. Therefore, the selection and sourcing of such a coach is a tricky proposition. The second coach would require a specific introduction when meeting the coach's clients to ensure that they do not turn to the potentially equally qualified second coach for answers. There may also be a cost associated with the second coach.

If the supervisor feels the researcher is suitably qualified and experienced to accompany the participant coach, that participant coach must also agree. If the participant coach is distracted by the researcher's actions, for example, if the researcher does not demonstrate best practice, is in marginal positions, or is unable to anticipate the coach's actions and therefore is in the way, the data will be negatively impacted. If the coach is expanding their span of control (Collins & Collins, 2015) to include the researcher, their attention is not entirely on the clients as it would be without researcher there, therefore unduly affecting the data. The researcher's potential distractions present an ethical issue in that the data collected may not be a true reflection of the coach's practice. Ultimately, the decision to use a second coach is made through a formal risk assessment and discussions with all stakeholders.

Intervention

The second ethical implication regarding safety in adventurous environments is a researcher's decision to intervene in a coaching session. I recognise that this may not be as an issue with the study of expert coaches; however, as research grows, there is value in understanding novice coaches' attitudes or behaviours. This leads to an interesting dynamic in which the researcher may be a more experienced and qualified coach than the participating coach, therefore, it is possible that the researcher may be able to spot a potentially life-threatening situation before the novice, if they spot it at all. Given that the researcher should not intervene so as to not bias the data collection and therefore, the findings of the study, should the researcher remain quiet? My position is that there is a simple answer to this ethical dilemma. As a high-level coach and a researcher, there is an ethical imperative to act to prevent injury. The precedent for this originates from the Tuskegee Study, see Brandt (1978), where medication was withheld from participants and the study later widely condemned as unethical.

The implication for such a situation is also simple. If a researcher intervenes in the session, the data collection for that session is nulled. Despite this simplistic approach, life in the real world is never so black and white: a life-threatening situation or not. The more astute question is: when is a situation life-threatening, poor coaching, or just mild peril. Answering this question relies on the researcher's professional judgment, and this judgment is refined with experience (Sinfield et al., 2019). I feel comfortable tackling these questions in the field based on my experience as an adventure sports qualification assessor. However, this should not be considered a prerequisite for researchers as there may be other ways to *ethically* justify a researcher's experience and ability to deal with such situations.

Concluding remarks

I propose there are innate similarities between the roles of a coach and a researcher (Collins et al., 2016). A coach or a researcher will need to understand the context for a coaching intervention or study; they will both conduct pre-action thinking (Schön, 1983) to form a hypothesis. A task or study is then designed to test that hypothesis, and subsequently, some on-action thinking takes place to determine its effectiveness. Perhaps the fundamental difference is that the adventure

sports coach is only ever dealing with a sample of one, whereas research aims to present indicative or generalisable results. This difference in time leads us to consider a common frustration for coaches: the length of time required to conduct research. If coaches are conducting micro-level research with a sample of one, hour by hour, it is logical that taking six to 12 months to complete the peer-review process for publication will be frustrating. However, this commonality in the role may also explain why coaches are interested in both participating in and conducting research. Additionally, with a practitioner background, programmes such as Masters of Research or Professional Doctorate (Huisman & Naidoo, 2006) are attractive propositions that demand both original research and practical implications.

Discussion has been offered on two pertinent challenges facing those wishing to conduct adventure sports research. Hopefully, this will stimulate debate between academics and practitioners alike and, in a limited capacity, act as a starting point for other coach researchers to consider the ethical considerations of their own research projects, however big or small. Lastly, I wish to report how valuable I have found the process of writing this article. Indeed, in defining a research philosophy, many of the ethical challenges faced became easier to reconcile in practice. However, given the recent growth of adventure sports research, comment is invited, and these challenges should be revisited in the not-too-distant future.

Disclosure of potential conflicts of interest

No potential conflict of interest was reported by the author(s).

Notes on contributors

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Dr Loel Collins has worked in the adventure sport industry for over 35 years. He is currently the Direction of Learning and Development at Plas y Brenin, the National Outdoor Centre in the UK. He has a range of high-level outdoor leadership and teaching qualifications. He has also taught undergraduate and postgraduate outdoor degree programmes in the Institute of Coaching and Performance at the University of Central Lancashire. His research has examined the specifics of coaching adventure sports, understanding judgment and decision-making, and adventure sport coach education. His current position focuses on the translation of theory to practice in outdoor instructor and leadership training.

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